

ALLOPOTAMON, A NEW GENUS FOR THE
FRESHWATER CRAB *POTAMON* (*POTAMONAUTES*)
TAMBELANENSIS RATHBUN, 1905
(CRUSTACEA: DECAPODA: POTAMIDAE)
FROM THE TAMBELAN ISLANDS

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Abstract.—The types of the poorly known potamid crab, *Potamon* (*Potamonautes*) *tambelanensis* Rathbun, 1905, are reexamined, and its systematic position clarified. The male first pleopod structure is unusually twisted, unlike any other potamid known from Southeast Asia, and warrants the establishment of a new genus, *Allopotamon*, for the species. Its affinities with allied Asiatic genera are also discussed.

Potamon (*Potamonautes*) *tambelanensis* was described from the Tambelan Islands in the Straits of Kalimantan, between Sumatra and Borneo, by Rathbun in her important revision of the world freshwater crabs in 1905. Although she provided a detailed description with figures, the drawings, especially of the male first pleopods, were too diagrammatic. In Bott's (1970b) revision of the Asian and Australian freshwater crabs, the species was mentioned only very briefly together with *Isolapotamon chaseni* (Roux, 1934). He implied that *Potamon tambelanensis* should be placed in the genus *Isolapotamon* Bott, 1968, in the family Isolapotamidae Bott, 1970a.

A reexamination of the pair of types showed, however, that Rathbun's species should be placed in a separate genus. In this paper I describe a new genus, *Allopotamon*, for *Potamon tambelanensis*. Detailed illustrations of its gonopods are provided and its affinities with related taxa are discussed. Types are deposited in the National Museum of Natural History (USNM), Smithsonian Institution, Washington, D.C. The abbreviations G1 and G2 are used for the male first and second pleopods, respectively. Measurements are of the carapace breadth and length, respectively.

Allopotamon, new genus

Diagnosis.—Carapace quadrilateral, gastric and branchial regions distinctly inflated, dorsal surface strongly convex. Exopod of third maxilliped with long flagellum. G1 relatively stout, strongly twisted, terminal segment distinctly demarcated from subterminal, tip pectinated, slightly truncate, pointing towards sternum, dorsal fold dilated. G2 with long flagellum, about half length of basal segment.

Type species.—*Potamon* (*Potamonautes*) *tambelanensis* Rathbun, 1905.

Etymology.—The name is derived from the Greek "allos" for 'the other,' and "Potamon," the type genus of the family. The gender is neuter.

Allopotamon tambelanense
(Rathbun, 1905), new combination
Figs. 1, 2

Potamon (*Potamonautes*) *tambelanensis*
Rathbun, 1905:182–183, pl. 15 fig. 4, fig. 46.

Potamon (*Potamon*) *tambelanensis* Bott,
1970b:191.

Diagnosis.—As for the genus.

Description.—Only a few points need to

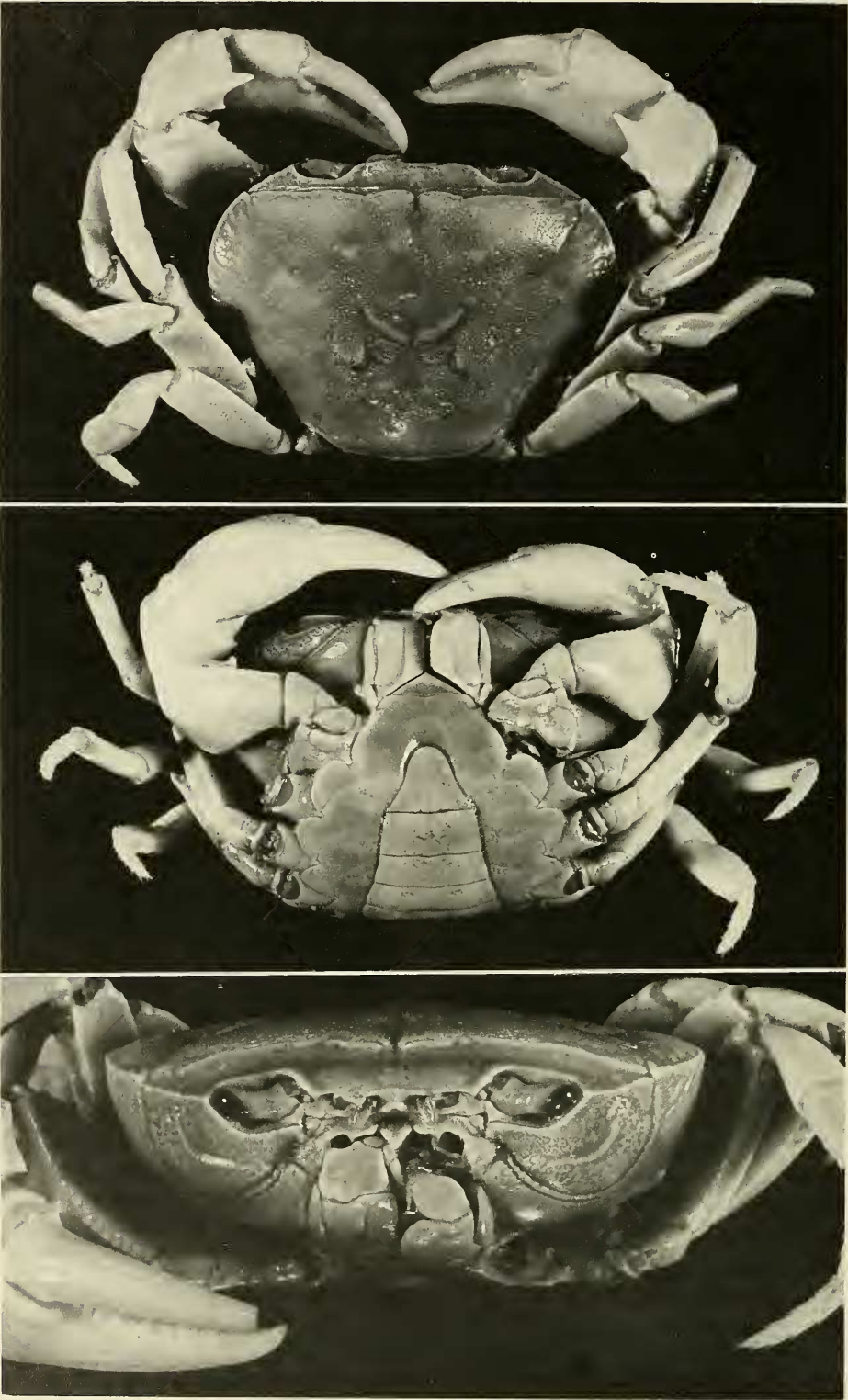


Fig. 1. *Allopotamon tambelanense*, holotype male.

be added to supplement Rathbun's (1905) excellent description of the species. The posterior margin of the epistome is produced in three lobes; the median one is triangular, and delimited from the others by well developed sutures; the openings for the efferent branchial channels are concave. The G1 is relatively stout and appears twisted. The terminal segment is distinctly demarcated from the subterminal; the dorsal lobe is dilated laterally, appearing swollen, ventrolateral margin distal to the swollen area bears numerous short hairs, the distal part is slender, tapered, and the slightly truncate tip, pectinate. The subterminal segment appears to be 2-segmented because of severe twisting, with the midlateral margin cleft, the proximal region of the distal part is strongly depressed. The flagellum of the G2 is long, about half the length of the basal segment, the latter is relatively straight, the tip of which is expanded into a cup-like structure, the proximal part of the basal segment is broadly dilated.

Material.—Holotype male (35.5 by 26.7 mm), paratype female (40.6 by 30.4 mm), USNM 23369, Big Tambelan Island (Pulau Tambelan Besar), South China Sea, Straits of Kalimantan, ca. 1°00'00"N, 107°33'26"E, leg. W. S. Abbott, 8–11 Aug 1899.

Remarks.—*Allopotamon tambelanense* can be distinguished easily from all other potamids by its swollen carapace and characteristically twisted G1. The G1 structure of *A. tambelanense* is like no other presently known potamid from Southeast Asia, and warrants the establishment of a new genus for the species. The severity of the twisting, especially in the median region, resembles that in the genus *Candidiopotamon* Bott, 1967, especially that of *C. rathbunae* (De Man, 1914) from the Republic of China (Formosa, Taiwan) and *C. okinawaense* Minei, 1973, from Okinawa, Japan. Direct comparisons of the G1s of *C. rathbuni* and *A. tambelanense* show however, that the terminal segment of *A. tambelanense* is very different, being more conical, and the tip dilated. The carapace of

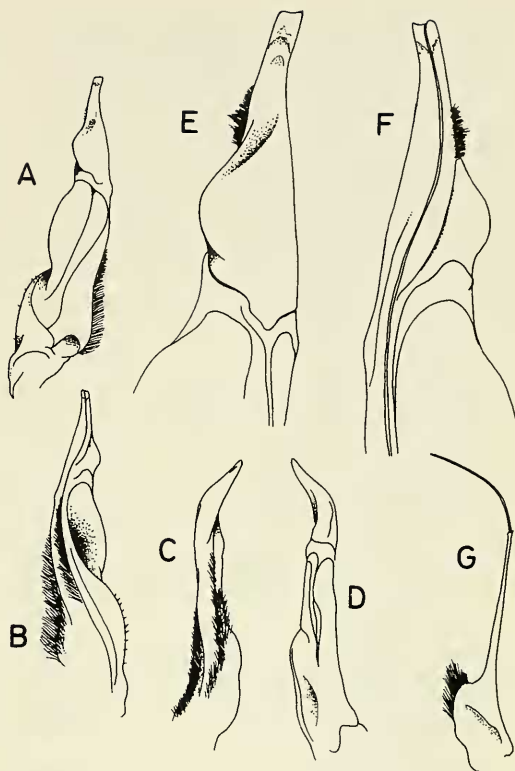


Fig. 2. *Allopotamon tambelanense*, holotype male. A–F, Left G1; G, Left G2; A, Dorsal view; B, Ventral view; C, Mesial (upper marginal) view; D, Mantel (lower marginal) view; E, Terminal segment (dorsal view); F, Terminal segment (ventral view).

Candidiopotamon is flatter, more nearly square, and the male abdomen is much more quadrate than are their respective structures in *A. tambelanense*.

Bott (1970b), in transferring *Potamon* (*Potamiscus*) *chaseni* Roux, 1934, to the genus *Isolapotamon* and family *Isolapotamidae*, commented that "... In diese Verwandtschaft gehört vermutlich auch *Potamon* (*Potamon*) *tambelanensis* Rathbun 1904 ... von der Insel Tambelan zwischen Boreno und Singapore" (p. 191). Although he implied a relationship with the genus *Isolapotamon*, he did not formally classify Rathbun's species with any known genus. In the general structure of the carapace, shape of the male abdomen, and presence of a distinct flagellum on the exopod

of the third maxillipeds *Allopotamon* resembles *Isolapotamon*, but their G1s argue for the separation of the two taxa. The G1s of *Isolapotamon*, in sharp contrast to those of *Allopotamon*, are very long and slender, the terminal segment very elongate, being almost as long as the subterminal. Most of the *Isolapotamon* species also have flatter carapaces. Possessing a very different G1 and lacking a flagellum on the exopod of the third maxilliped, *Potamon chaseni* also cannot be retained in the genus *Isolapotamon* as currently defined (Ng 1986a, 1987b), but should instead be transferred to the genus *Stoliczia* Bott, 1966, s.s. (Ng, 1988). Although Bott (1970b) established a new family for the genus *Isolapotamon* and its kin, Ng & Yang (1985, 1986) and Ng (1986a, 1987b) regarded the differences between the Isolapotamidae and Potamidae s.s. as too minor to justify two separate families. They synonymized the two families, with the Potamidae having seniority, and this classification is adopted herein.

Bott (1970b) gave the date of Rathbun's species as 1904, but it should be 1905. Rathbun's classic monograph on the freshwater crabs was originally intended for publication as one volume, but eventually came out in three consecutive volumes, each with the same title but different dates of publication (1904 to 1906). They should thus be treated as separate publications (Schmitt 1973). *Potamon tambelanensis* was described in the second volume (7), published in 1905.

Although Bott (1970b) dismissed the value of the exopod flagellum of the third maxilliped in the classification of freshwater crabs, there has been some revival in its use (Rodriguez 1982, Ng & Yang 1985, Ng 1985, 1987a). With regards to the Southeast Asian potamid freshwater crab fauna, only the genera *Isolapotamon*, *Ranguna* Bott, 1968 s.s., *Johora* Bott, 1968, sensu Ng, 1987a, and *Terrapotamon* Ng, 1986b) (partim), have a distinct flagellum. The genus *Ranguna*, as defined by Bott (1970b), contained taxa from peninsular Malaysia, but Ng

(1987a, 1988) revised it, restricting *Ranguna* to species found north of the Kra of Isthmus (ca. 8°N). The G1s of these genera however, are very different from those of *Allopotamon*. The G1 terminal segment of *Allopotamon* resembles that of many *Ranguna* species, but in *Allopotamon*, it is stouter, and the subterminal segment is stout and twisted. The general shape of the G1 resembles that of *Terrapotamon*, but in this genus, neither the terminal nor the subterminal segments are as complex. The carapace of *Allopotamon* is quite close to that of *Terrapotamon*, being inflated, probably associated with their semiterrestrial habits. The male abdomen of *Terrapotamon* however, is more distinctly triangular, and the flagellum on the exopod of the third maxillipeds is either short as in *T. aipooae* Ng, 1986b, or vestigial as in *T. abbotti* (Rathbun, 1898) (fide Ng 1986b, 1988).

The Tambelan Islands are 140 km west of Borneo and 280 km east of the Riau Archipelago, and in all likelihood, the prolonged isolation of these islands accounts for the unusual G1 structure of *A. tambelanense*. The montane habitat of the crab (preferred by most potamids) would probably also serve to isolate the taxon further (Ng 1985, 1987a).

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Literature Cited

- Bott, R. 1970a. Betrachtungen über die entwicklungsgeschichte und verbreitung der süßwasserkrabben nach sammlung des naturhistorischen museums in Genf/Schweiz. — *Revue Suisse de Zoologie* 77,(2), (24):327–344.

- . 1970b. Die süßwasserkrabben von Europa, Asien, Australien und ihre stammesgeschichte. Eine revision der Potamoidea und Parathelphusoidea. (Crustacea, Decapoda).—Abhandlungen der Senckenbergischen Naturforschenden Gesellschaft, Frankfurt 526:1–338, pls. 1–58.
- Ng, P. K. L. 1985. Freshwater decapod crustaceans from Pulau Tioman, West Malaysia.—Zoologische Mededelingen, Leiden 59(14):149–162.
- . 1986a. New freshwater crabs of the genus *Isolapotamon* Bott, 1968 from Kalimantan (Decapoda: Potamidae).—Treubia, Bogor 29(3): 215–223.
- . 1986b. *Terrapotamon* gen. nov., a new genus of freshwater crabs from Malaysia and Thailand, with description of a new species, *Terrapotamon aipooae* gen. et sp. nov. (Crustacea: Decapoda: Brachyura: Potamidae).—Journal of Natural History, London 20:445–451.
- . 1987a. A revision of the Malayan freshwater crabs of the genus *Johora* Bott, 1966 stat. nov. (Decapoda: Brachyura: Potamidae).—Malayan Nature Journal, Kuala Lumpur 41:13–44.
- . 1987b. Freshwater crabs of the genus *Isolapotamon* Bott, 1968 from Sarawak, Borneo (Crustacea, Decapoda, Brachyura, Potamidae).—Sarawak Museum Journal, Kuching n.s. 37(58):139–153, pls. 4–10.
- . 1988. The freshwater crabs of peninsular Malaysia and Singapore. Department of Zoology, National University of Singapore, Shinglee Publishers, Singapore. 156 pp., 63 figs., 4 pls.
- , & C. M. Yang. 1985. On three new species of freshwater crabs from Singapore and West Malaysia (Crustacea, Decapoda, Brachyura).—Malayan Nature Journal, Kuala Lumpur 39(1): 57–73.
- , & ———. 1986. A new freshwater crab of the genus *Isolapotamon* Bott, 1968 from Sarawak, Borneo (Decapoda, Brachyura, Potamidae).—Indo-Malayan Zoology, Rotterdam 3(1): 15–18.
- Rathbun, M. J. 1905. Les crabes d'eau douce.—Nouvelles Archives du Muséum d'Histoire Naturelle, Paris (4)7:159–321, pls. 13–22.
- Rodriguez, G. 1982. Les crabes d'eau douce d'Amérique. Famille des Pseudothelphusidae.—Office de la Recherche Scientifique et Technique Outre-Mer, Faune Tropicale 22:1–223.
- Schmitt, W. L. 1973. Mary J. Rathbun 1860–1943.—Crustaceana 24:285–297, pl. 1.

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